

# Deer Farming in Asia

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*In addition to his job as programme leader for deer production and health at Invermay, Ken is active in the New Zealand deer industry being the current chairman of the Otago Branch of the NZ Deer Farmers Association and he was recognised through the NZ Deer Industry Award in 1995.*

## INTRODUCTION

The Pacific rim deer farming countries of Asia range widely in latitude from near the equator (Malaysia, Thailand and Indonesia) to northern countries with cold winters such as Japan, Korea and the eastern parts of the Combined Independent States (C.I.S.). The largest number of farmed deer in the region are Sika deer in the winter-cold countries of China, Korea and Eastern C.I.S.

**Table 1:** Estimates of Asian deer populations

Country	Deer Species	Number estimates
China	Red, Wapiti, Sika	> 500,000
Far East C.I.S.	Sika, Wapiti	400,000?
Korea	Sika, Wapiti, Red	100,000 - 200,000
Taiwan	Sika, Sambar, Red	36,000
Vietnam	Sika	15,000
Malaysia	Red, Fallow, Rusa	15,000
Thailand	Sambar, Rusa	5,000
Indonesia	Sambar, Rusa	small number

## China

Next to New Zealand, China has the largest farmed deer population in the world with about 500,000 animals which are mainly Sika deer but some red and Wapiti-type with smaller numbers of Sambar, white-lipped deer and musk deer. Much of the industry is based on feedlot management where most of the feed is cut from crops and carted to the deer. Concentrate rations are widely used. In the hill and mountain country the deer are managed in grazing units being controlled by dogs or, in more recent times, electric fencing powered by solar panels (Drew *et al.*, 1989). Farming systems are almost entirely focused on the production of velvet antler for the local medicine trade and product yields are about 2.5 kg/stag/year as 3 tine Sika and over 7.0 kg/stag/year from Wapiti-type stags (Li Chunyi, 1993).

Concentrate feeds containing high protein soyabean meal is widely used to improve antler growth. Very high levels of protein are frequently fed to stags in late winter to accelerate the process of hard antler casting and initiation of the new season's growth (Pinney, 1981).

Reproductive rate in the farmed Sika deer is 85-90% and about 5% less for Red/Wapiti. Since 1981 there has been an A.I. programme on an undefined number of Red deer. electro-ejaculation has given an 87% success rate in obtaining semen and in more recent times the use of an artificial vagina has proved to be successful which decreases labour requirements and lowers stress in the stags. Intrauterine insemination aided by rectal palpation has given a very high conception rate of 74% (Zhao Yufang *et al.*, 1996). Superior breeding sires are being used to inseminate > 600 females per stag through A.I. when a normal mating would be to run the stag with 10-20 females. Antler yield through an improved breeding programme has been reported to increase by 98% over an undefined time period (Zhao Yufang *et al.*, 1996).

In relation to the size of the country and the population, China has a very small farmed deer industry and it is mainly producing products for its home market. It does not seem likely that the country will dramatically increase the size of its industry in the near future and it is more likely that there may be an increasing opportunity for countries to develop trade in deer products with China as the standard of living increases.

### **Combined Independent States (Russia)**

This vast and complex area farms a large number of Sika and Wapiti-type (maral) animals. The Sika are mainly found in the eastern states and around the Caucasus region. The farming system is open grazing/browsing in contained areas with heavy supplementary feeding of hay and concentrates (grain and acorns) in the long cold winters. Cultivation and growing crops such as lucerne, meadow fescue, timothy and lupins is practised locally. Animal handling is infrequent but stags are penned in the spring for velvet antler harvest (Drew *et al.*, 1989). In the Gorny Altai region near the Mongolian, Chinese and Khazakstan borders maral deer are farmed on a large scale and produce what is perceived as premium velvet antler for local consumption and the Korean market. The stags are run in very large herds and managed quite intensively for their velvet antler spending seven or eight months of each year in a feedlot situation. The breeding cows are run very extensively with minimal human interference (Wallis, 1993). Velvet antler productivity is exceptionally high with one commercial herd of more than 1,000 stags cutting an average of greater than 9 kg/head. By New Zealand standards the product would often be "overgrown" but the market place does recognise the Russian product as at the top end of the range.

Venison product from the C.I.S. is from a range of feral and farmed deer but almost all of it is used in the home market. Export opportunities to Western Europe will be very limited and due to quality management issues will not be in direct competition in the chilled venison market.

### **Other Asian countries**

Korea is a significant deer farming country and the major market for velvet antler products. There are between 100,000 and 200,000 farmed Sika, Red and Wapiti (Elk) in the country (Kwon, 1993). The industry is growing rapidly, but since it is mainly dependent on velvet antler the immediate future is uncertain. There are a large number of quite small deer farm holdings in Korea and virtually all the animals are held on small areas of land and owned by

wealthy merchants. Feed supplied is almost all in a concentrate form with half in the form of a dairy ration and the rest as barley bran. Research is now being done to substitute various forms of roughage for some of the high cost concentrate.

Southeast Asian countries have very small numbers of farmed deer and these are mainly tropical species such as Rusa and Sambar. Present operators are mainly corporate businesses who see a profitable opportunity to invest in an industry that can deliver high value niche market venison and velvet antler. Tropical deer, without seasonal cues of changing daylength, present a biology in terms of reproduction, growth rate and antler production which is not well understood. There are a small number of tropical research groups that have established investigations to provide relevant information necessary to successfully farm deer in the tropics.

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